SV Series
Insert Manual

For complete installation instructions, see the Tube Heater General Manual that accompanies this Series Insert Manual.

The SV Series Infrared Tube Heater is a negative pressure, single-stage radiant heater system. This insert manual is a supplement to the Tube Heater General Manual and provides specific information related to the SV Series model. All persons involved with the installation, operation and maintenance of the heater system must read and understand the information in this insert manual and the accompanying Tube Heater General Manual.

⚠ WARNING

Improper installation, adjustment, alteration, service or maintenance can cause property damage, injury or death. Read the installation, operation and maintenance instructions thoroughly before installing or servicing this equipment.

This heater must be installed and serviced by trained gas installation and service personnel only. Failure to comply could result in personal injury, asphyxiation, death, fire or property damage.

In locations used for the storage of combustible materials, signs must be posted to specify the maximum permissible stacking height to maintain the required clearances from the heater to the combustibles. Signs must either be posted adjacent to the heater thermostats or in the absence of such thermostats, in a conspicuous location.

Not for residential use! Do not use this heater in the home, sleeping quarters, attached garages, etc. Installation of a commercial tube heater system in residential indoor spaces may result in property damage, serious injury, asphyxiation or death.

For Your Safety

If you smell gas:

- Do not try to light any appliance.
- Do not touch any electrical switch.
- Do not use any phone in your building.
- Immediately call your gas supplier from a neighbor's phone.
- Follow the gas supplier's instructions.
- If you cannot reach your gas supplier, call the fire department.

Keep these instructions for future reference.

LIOSVa-Rev. 18111
Print: 1M-9/12_r1-2/13 (CDS)
Replaces: LIOSVa-1M-1/11 (DRP)

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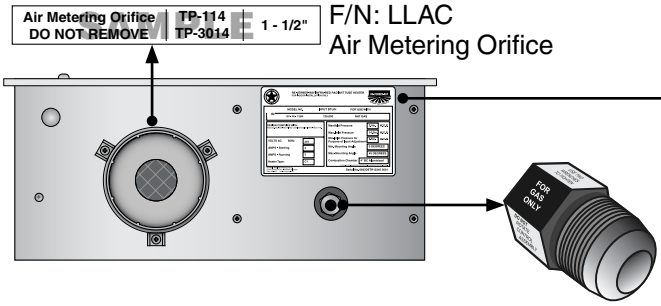
NOTE: See page 10 for a list of available models and specifications.

1.0 Safety

Read and understand all safety information and warnings in this insert manual and the Tube Heater General Manual before installation, operation and maintenance of the radiant tube heater system.

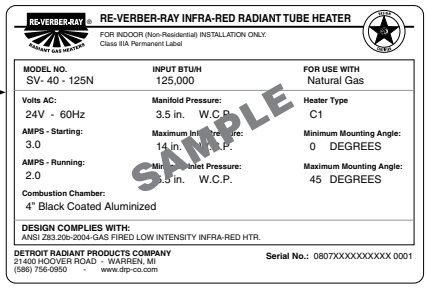
Safety Labels and Their Locations

Product safety signs or labels should be replaced by the product user when they no longer are legible. Contact either your local distributor or the product manufacturer for obtaining replacement signs or labels.



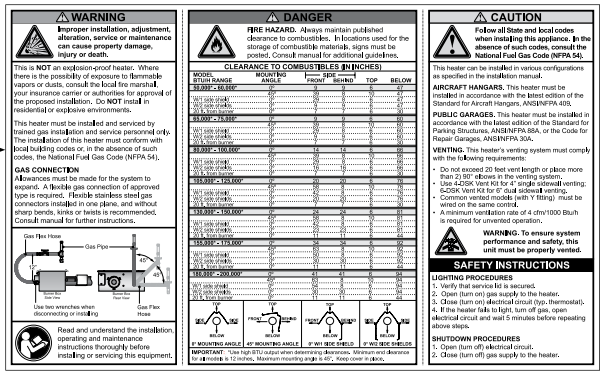
F/N: LLAC
Air Metering Orifice

F/N: LLTB018 (Natural Gas)
F/N: LLTB019 (LP Gas)

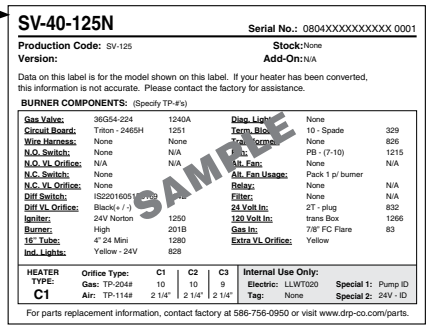


Rating Plate

Top Panel

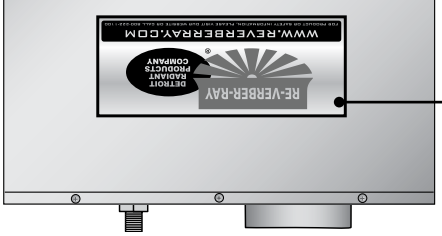

WARNING
Improper installation, adjustment, alteration, service or maintenance can cause property damage, injury or death.
DANGER
FIRE HAZARD. Always maintain published clearance to combustibles. In locations used for the storage of combustible materials, signs must be posted. Consult manual for additional guidelines.
CLEARANCE TO COMBUSTIBLES (IN INCHES)
CAUTION
Follow all State and local codes when installing this appliance. In the absence of such codes, consult the National Fuel Gas Code (NFPA 54).
SAFETY INSTRUCTIONS
LIGHTING PROCEDURES
SHUTDOWN PROCEDURES

F/N: LLTCL001
Clearance to Combustibles Label.


SV-40-125N
Serial No.: 0804XXXXXXXXX 0001
Production Code: SV-125
Stock:None
Version:
Add-On:N/A
Data on this label is for the model shown on this label. If your heater has been converted, this information is not accurate. Please contact the factory for assistance.
BURNER COMPONENTS: (Specify TP-#'s)
Gas Valve: 36G54-224 1240A
Circuit Board: Triton - 2465H 1251
Wire Harness: None None
N.O. Switch: None N/A
N.O. VL Orifice: N/A N/A
N.C. Switch: None
N.C. VL Orifice: None
Diff Switch: IS2201605 [illegible]
Diff VL Orifice: Black(+ / -)
Igniter: 24V Norton 1250
Burner: High 201B
16" Tube: 4" 24 Mini 1280
Ind. Lights: Yellow - 24V 828
Disp. Light: None
Term. Blo: 10 - Spade 329
Tra[illegible]rmer: None 826
[illegible]: PB - (7-10) 1215
Alt. Fan: None N/A
Alt. Fan Usage: Pack 1 p/ burner
Relay: None N/A
Filter: None N/A
24 Volt In: 2T - plug 832
120 Volt In: trans Box 1266
Gas In: 7/8" FC Flare 83
Extra VL Orifice: Yellow
HEATER TYPE: C1
Orifice Type: Gas: TP-204# Air: TP-114#
C1 10 2 1/4"
C2 10 2 1/4"
C3 9 2 1/4"
Internal Use Only:
Electric: LLWT020
Tag: None
Special 1: Pump ID
Special 2: 24V - ID
For parts replacement information, contact factory at 586-756-0950 or visit www.drp-co.com/parts.
SAMPLE

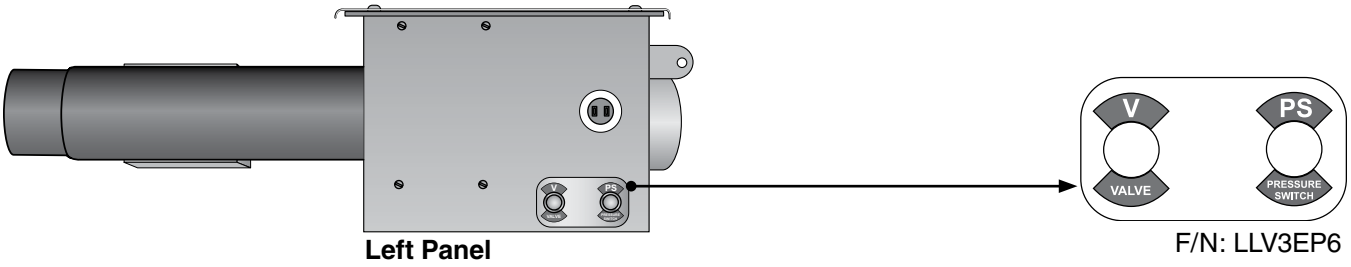
Burner Control Box
Component Label
(located under the top panel)

Bottom Panel



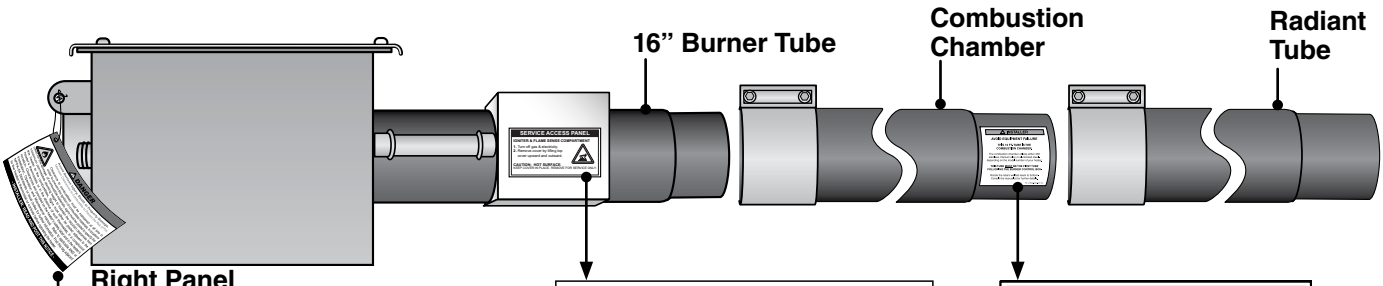
RE-VERBER-RAY
DETROIT RADIANT PRODUCTS COMPANY
WWW.REVERBERRAY.COM
FOR PRODUCT OR SAFETY INFORMATION, PLEASE VISIT OUR WEBSITE OR CALL 800-222-1100

F/N: LLLOGO1



Left Panel

F/N: LLV3EP6



Right Panel
(Valve Compartment)

⚠ DANGER

Avoid Serious Injury, Death or Property Damage.
Maintain Clearances to Combustible to Prevent the Risk of Fire.

Clearance to combustibles must be maintained at all times in order to prevent the ignition of combustible materials. In locations used for the storage of combustible materials, signs must be posted to specify the maximum permissible stacking height to maintain the required clearances from the heater to the combustibles. Signs must either be posted adjacent to the heater's thermostats or in the absence of such thermostats, in a conspicuous location. Clearances are provided on the heater's safety label and in the heater's Installation, Operation and Maintenance manual. Product installation and operation must comply with applicable standards, codes and regulations. Post this tag adjacent to the heater's thermostat or controls before operating the heater.

- INSTALLER: READ AND POST THIS NOTICE -

F/N: LL01 - Clearance Safety Tag
(Affix adjacent to heater's thermostat).

SERVICE ACCESS PANEL
IGNITER & FLAME SENSE COMPARTMENT
1. Turn off gas & electricity.
2. Remove cover by lifting top cover upward and outward.

CAUTION: HOT SURFACE.
KEEP COVER IN PLACE. REMOVE FOR SERVICE ONLY.

F/N: LLTB026

⚠ INSTALLER

AVOID EQUIPMENT FAILURE

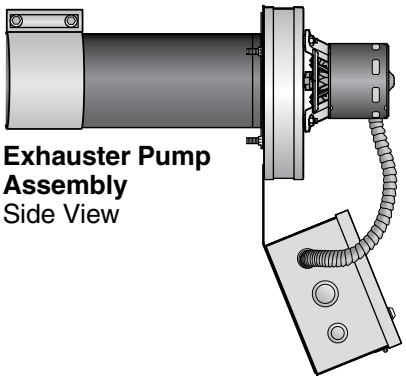
THIS 10 FT. TUBE IS THE COMBUSTION CHAMBER.

The combustion chamber utilizes either 409 stainless, titanium alloy or aluminized steel - depending on the model number of your heater.

THIS TUBE MUST BE THE FIRST TUBE FOLLOWING THE BURNER CONTROL BOX.

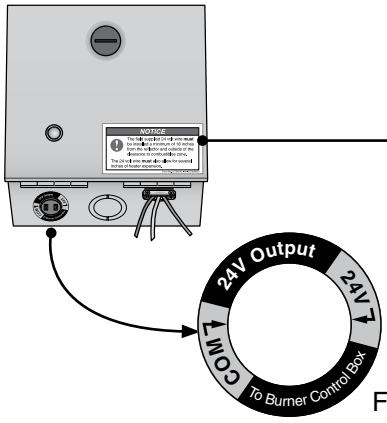
Rotate the tube's welded seam to bottom. Consult the manual(s) for further details.

F/N: LLTB004 (orange)
Applicable on 150-200 MBH models only



Exhauster Pump Assembly
Side View

Power Box
Front View



F/N: LLTB033

NOTICE

The 24 volt wire (14 ga. multistrand required) **must** be installed a minimum of 18 inches from the reflector and outside of the clearance to combustibles zone.

The 24 volt wire **must** also allow for several inches of heater expansion.

F/N: LLTB032

Clearance to Combustibles

⚠ WARNING

Placement of explosive objects, flammable objects, liquids and vapors close to the heater may result in explosion, fire, property damage, serious injury or death. Do not store or use explosive objects, liquids or vapor in the vicinity of the heater.

Clearance to combustibles is defined as the minimum distance that must be maintained between the tube surface, or reflector, and any combustible items (see Figure 1.1). It also pertains to the distance that must be maintained from moving objects around the tube heater. Refer to Chart 1.1 to determine the required distances for your model.

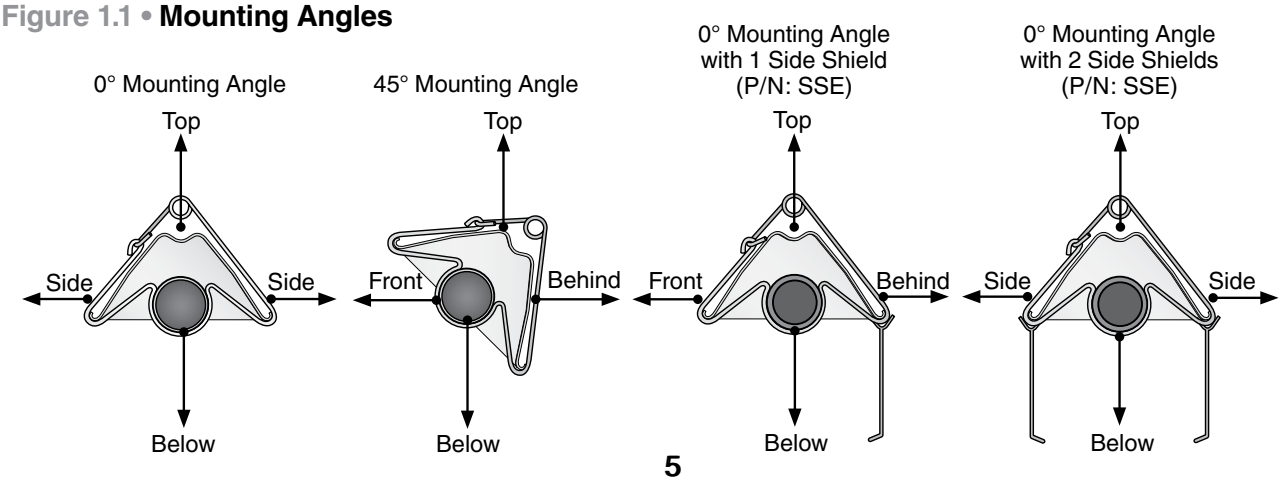
Chart 1.1 • **Clearance to Combustibles in Inches** (see Figure 1.1 for Mounting Angles)

Model Number	Mounting Angle*	Side		Top	Below
		Front	Behind		
SV (20, 30, 40) - 50, 60 [N, P]	0°	9	9	6	47
	45°	39	8	10	47
with 1 side shield	0°	29	8	6	47
with 2 side shields	0°	9	9	6	47
20 ft. from burner	0°	7	7	6	30
SV (20, 30, 40) - 75 [N, P]	0°	9	9	6	60
	45°	39	8	10	60
with 1 side shield	0°	29	8	6	60
with 2 side shields	0°	9	9	6	60
20 ft. from burner	0°	7	7	6	30
SV (30, 40, 50) - 100 [N, P]	0°	14	14	6	66
	45°	39	8	10	66
with 1 side shield	0°	29	8	6	66
with 2 side shields	0°	16	16	6	66
20 ft. from burner	0°	7	7	6	30
SV (30, 40, 50) - 125 [N, P]	0°	20	20	6	76
	45°	58	8	10	76
with 1 side shield	0°	42	8	6	76
with 2 side shields	0°	20	20	6	76
20 ft. from burner	0°	7	7	6	30
SV (40, 50, 60) - 150 [N, P]	0°	24	24	6	81
	45°	58	8	10	81
with 1 side shield	0°	42	8	6	81
with 2 side shields	0°	23	23	6	81
20 ft. from burner	0°	11	11	6	44
SV (40, 50, 60, 70) - 175 [N, P]	0°	34	34	6	92
	45°	63	8	10	92
with 1 side shield	0°	50	8	6	92
with 2 side shields	0°	30	30	6	92
20 ft. from burner	0°	11	11	6	44
SV (50, 60, 70, 80) - 200 [N, P]	0°	41	41	6	94
	45°	63	8	10	94
with 1 side shield	0°	54	8	6	94
with 2 side shields	0°	30	30	6	94
20 ft. from burner	0°	11	11	6	44

*Heaters mounted on an angle between 0° to 45° must maintain clearances posted for 0° or 45°; whichever is greater.

The stated clearance to combustibles represents a surface temperature of 90°F (32°C) above room temperature. Building materials with a low heat tolerance (such as plastics, vinyl siding, canvas, tri-ply, etc.) may be subject to degradation at lower temperatures. It is the installer's responsibility to assure that adjacent materials are protected from degradation.

Figure 1.1 • **Mounting Angles**



2.0 Installation

⚠ WARNING

Not for residential use! Improper installation, adjustment, alteration, service or maintenance can cause property damage, serious injury or death.

Read and understand, the installation, operating and maintenance instructions thoroughly before installing or servicing this equipment. Only trained, qualified gas installation and service personnel may install or service this equipment.

Instructions for the following are detailed in the Tube Heater General Manual:

- Design considerations
- Hanger suspension and placement
- Tube layout and assembly
- Burner control box suspension
- Reflectors (and accessories)
- Venting and combustion air intake
- Gas requirements
- Baffle assembly

Note: Electronic versions of all manuals are available at www.detroitradiant.com

Gas Requirements

Type of Gas	Required Manifold Pressure	Minimum Inlet Pressure	Maximum Inlet Pressure
Natural	3.5 Inches W.C.	5.0 Inches W.C.	14.0 Inches W.C.
Liquefied Petroleum	10.0 Inches W.C.	11.0 inches W.C.	14.0 Inches W.C.

NOTE: Check manifold pressure at the tap on the gas valve. Small variations in manifold pressure (actual vs. published) may exist due to changing atmospheric conditions. Readings will be above atmospheric pressure.

IMPORTANT: Consult the Tube Heater General Manual for gas connection requirements.

Electrical Requirements

⚠ WARNING

Electric Shock

Field wiring to the tube heater must be connected and grounded in accordance with national, state, provincial, local codes and to the guidelines in the Tube Heater General Manual and Series Insert Manual. In the United States refer to the most current revisions to the ANSI/NFPA 70 Standard and in Canada refer to the most current revisions to the CSA C22.1 Part I Standard.

Power to the exhauster assembly is supplied via a 120VAC-60Hz. connection and controlled via a thermostat or switch. The burner control box is powered by 24VAC via the terminal plug connection from the exhauster power box assembly. See Figures 2.1-2.2.

- 120 Volt - 60 Hz GRD, 3-wire.
- Starting current 3.0 amps
- Running current 2.0 amps

The use of 14 ga. minimum multi strand wire (field supplied) is required to connect the exhauster assembly to the burner control box. A round terminal plug accepts two (2) 1/4" insulated female spade terminals (field supplied).

IMPORTANT: The wire (field supplied) connecting the exhauster power box assembly to the burner control box **must** be mounted a minimum of 18 inches from the top of the reflector and outside of any other clearance requirements. The span of wire **must** allow for several inches of heater expansion.

Thermostat

SV Series heaters require a 120VAC thermostat to operate. **NOTE:** Different thermostats operate according to their particular features. Refer to thermostat specifications for details.

NOTE: The wire (field supplied) is **not** where the thermostat is tied into. The thermostat switches the 120VAC supply voltage. Refer to field wiring diagrams (Figures 2.1A & 2.1B).

Wiring

NOTE: If any of the original wire as supplied with the appliance must be replaced, it must be replaced with wiring material having a temperature rating of at least 105° C.

Figure 2.1 • Field Wiring Diagrams

A. Line Voltage Thermostat Wiring - Single thermostat (20 amp), up to six heaters.

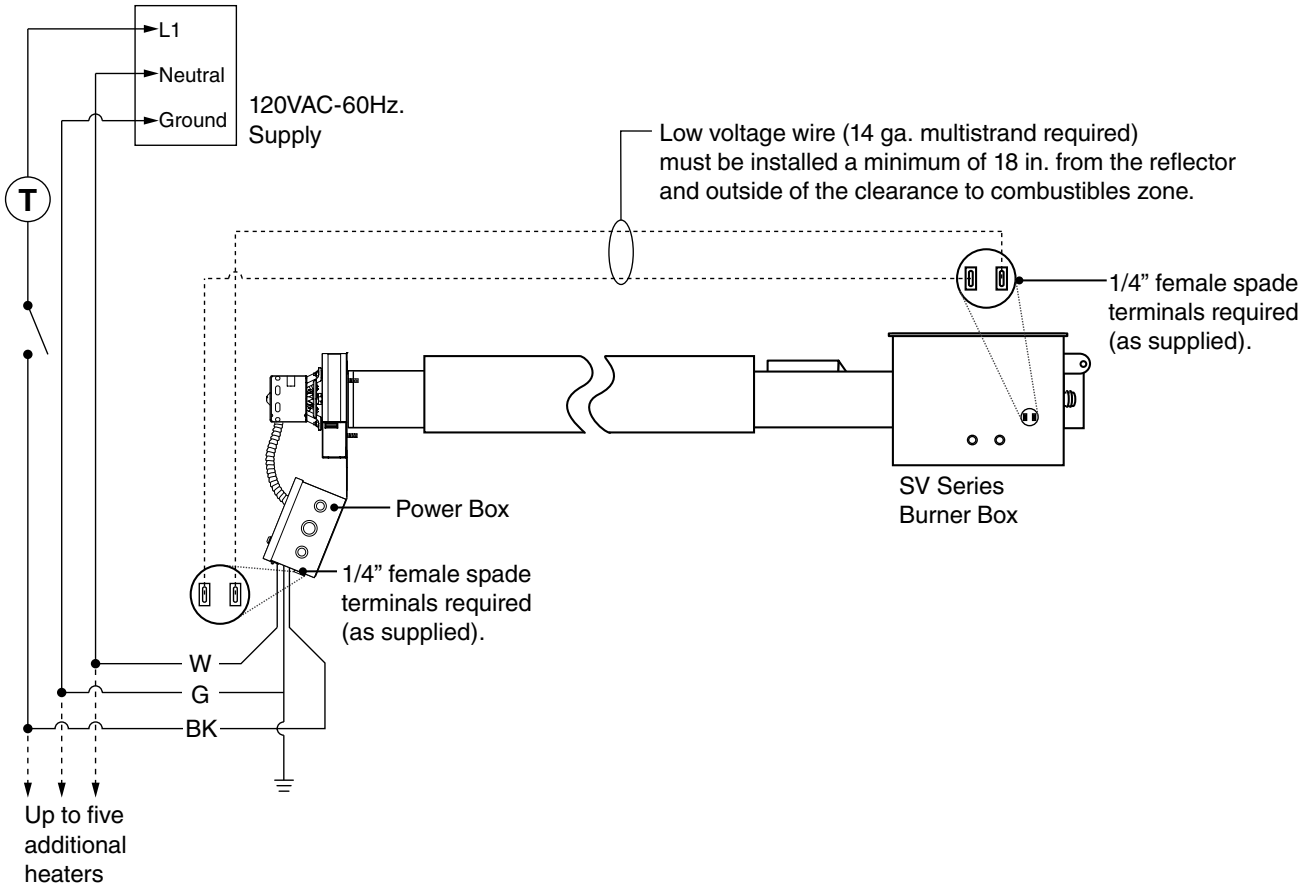


Figure 2.1 • Field Wiring Diagrams

B. Low Voltage Thermostat Wiring (with optional R8285B transformer relay) - Up to Five Heaters per branch.

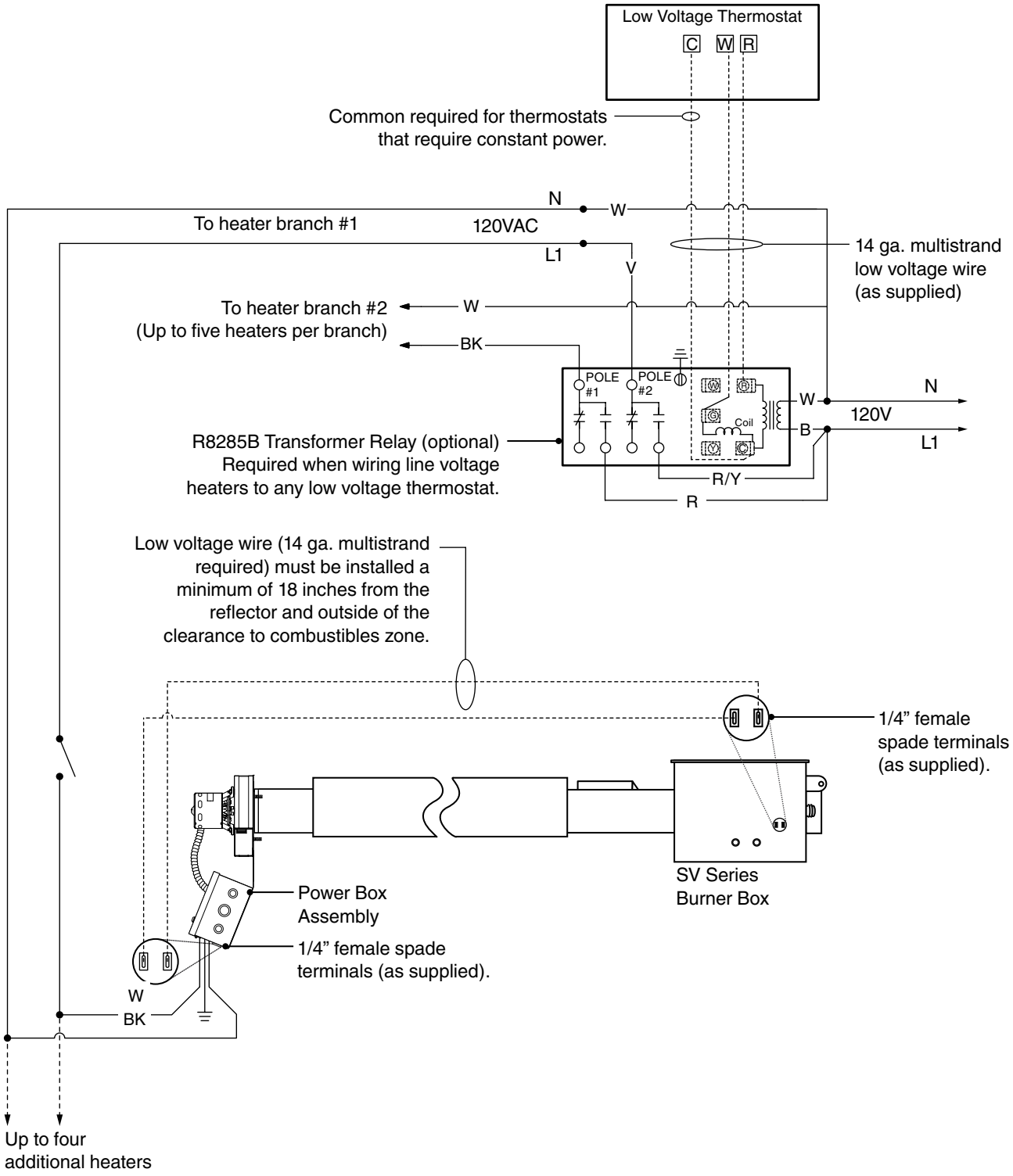
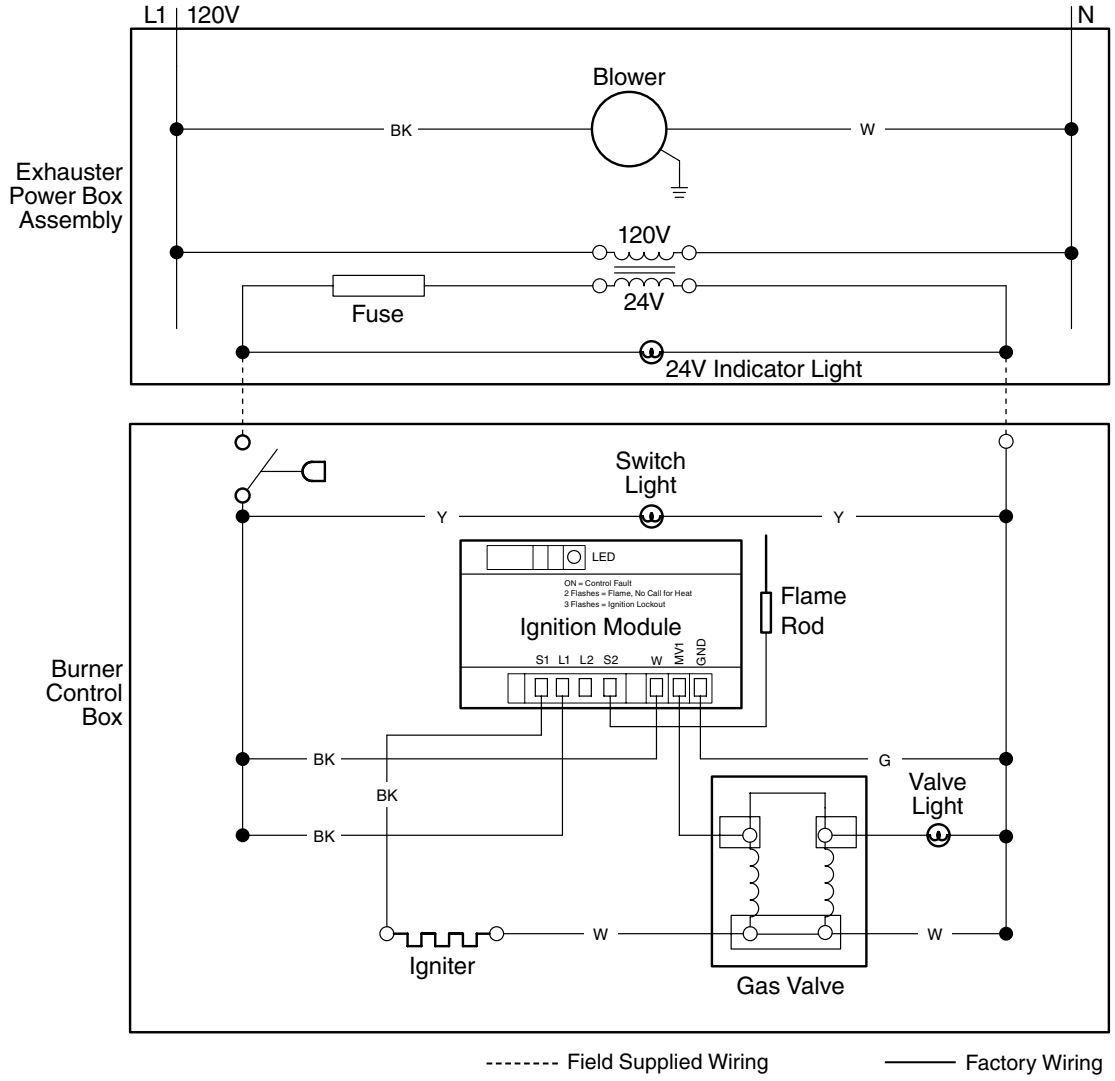
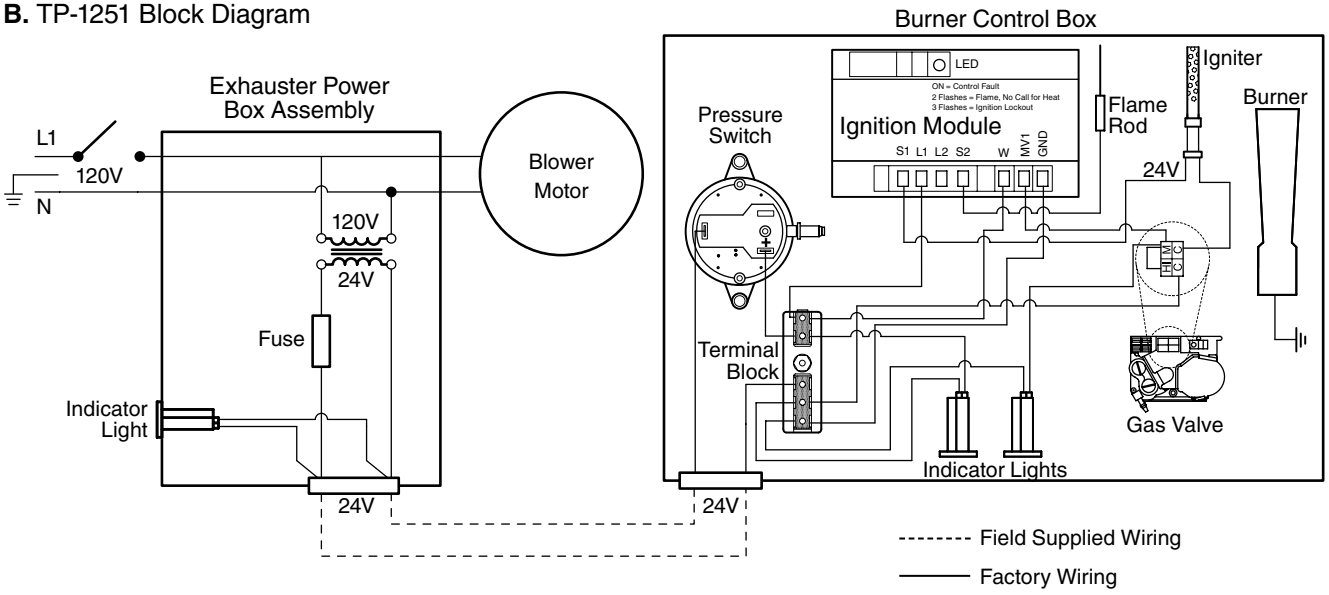


Figure 2.2 • Internal Wiring Diagrams

A. TP-1251 Ladder Diagram



B. TP-1251 Block Diagram



Specifications

Chart 2.1 • Specifications

Model Number	Gas Type (select one)	BTU/h	Straight Length	U-Tube Length	Standard Weight (lbs.)	Recommended Mounting Height	Combustion Chamber	Radiant Emitter Tube(s) (Black Coated)	Radiant Surface Area (sq. ft.)	36" Baffle Sections	Maximum Vent Length (ft.)
SV-20-50	N or LP	50,000	22'-7"	13'-0"	140	9' to 14'	Alum	Alum	20.2	5	25
SV-20-60	N or LP	60,000	22'-7"	13'-0"	140	10' to 15'	Alum	Alum	20.2	5	25
SV-20-75	N or LP	75,000	22'-7"	13'-0"	140	10' to 15'	Alum	Alum	20.2	5	30
SV-30-50	N or LP	50,000	32'-3"	**17'-8"	180	10' to 15'	Alum	Alum	30.4	4	20
SV-30-60	N or LP	60,000	32'-3"	**17'-8"	180	11' to 18'	Alum	Alum	30.4	4	20
SV-30-75	N or LP	75,000	32'-3"	**17'-8"	180	12' to 20'	Alum	Alum	30.4	4	25
SV-30-100	N or LP	100,000	32'-3"	**17'-8"	180	13' to 23'	Alum	Alum	30.4	3	30
SV-30-125	N or LP	125,000	32'-3"	**17'-8"	180	14' to 25'	Alum	Alum	30.4	5	35
SV-40-50	N or LP	50,000	41'-11"	22'-8"	210	11' to 18'	Alum	Alum	40.5	3	20
SV-40-60	N or LP	60,000	41'-11"	22'-8"	210	11' to 18'	Alum	Alum	40.5	3	20
SV-40-75	N or LP	75,000	41'-11"	22'-8"	210	12' to 20'	Alum	Alum	40.5	3	25
SV-40-100	N or LP	100,000	41'-11"	22'-8"	210	13' to 23'	Alum	Alum	40.5	2	25
SV-40-125	N or LP	125,000	41'-11"	22'-8"	210	14' to 25'	Alum	Alum	40.5	4	30
SV-40-150	N or LP	150,000	41'-11"	22'-8"	210	15' to 27'	Titan	Alum	40.5	4	35
SV-40-175	N or LP	175,000	41'-11"	22'-8"	210	16' to 30'	Titan	Alum	40.5	4	35
SV-50-100	N or LP	100,000	51'-7"	**27'-4"	255	15' to 27'	Alum	Alum	50.6	1	25
SV-50-125	N or LP	125,000	51'-7"	**27'-4"	255	15' to 27'	Alum	Alum	50.6	3	30
SV-50-150	N or LP	150,000	51'-7"	**27'-4"	255	16' to 30'	Titan	Alum	50.6	3	30
SV-50-175	N or LP	* 175,000	51'-7"	**27'-4"	255	17' to 35'	Titan	Alum	50.6	3	35
SV-50-200	N or LP	* 200,000	51'-7"	**27'-4"	255	18' to 40'	Titan	Alum	50.6	4	35
SV-60-150	N or LP	150,000	61'-3"	32'-4"	285	17' to 35'	Titan	Alum	60.7	2	25
SV-60-175	N or LP	* 175,000	61'-3"	32'-4"	285	17' to 35'	Titan	Alum	60.7	2	30
SV-60-200	N or LP	* 200,000	61'-3"	32'-4"	285	18' to 40'	Titan	Alum	60.7	3	30
SV-70-175	N or LP	* 175,000	70'-11"	**37'-0"	320	19' to 42'	Titan	Alum	70.9	1	25
SV-70-200	N or LP	* 200,000	70'-11"	**37'-0"	320	19' to 42'	Titan	Alum	70.9	2	30
SV-80-200	N or LP	* 200,000	80'-7"	42'-0"	350	20' to 45'	Titan	Alum	80.1	1	25

See Figure 2.6 for exhauster assembly dimensions.

* Model requires stainless steel tube clamp (P/N: TP-220) to be located at the seam between the first and second 10 ft. tube sections downstream of the burner control box.

** Model requires 5EA-SUB accessory package when installing in a 'U' configuration (P/N: TF1B).

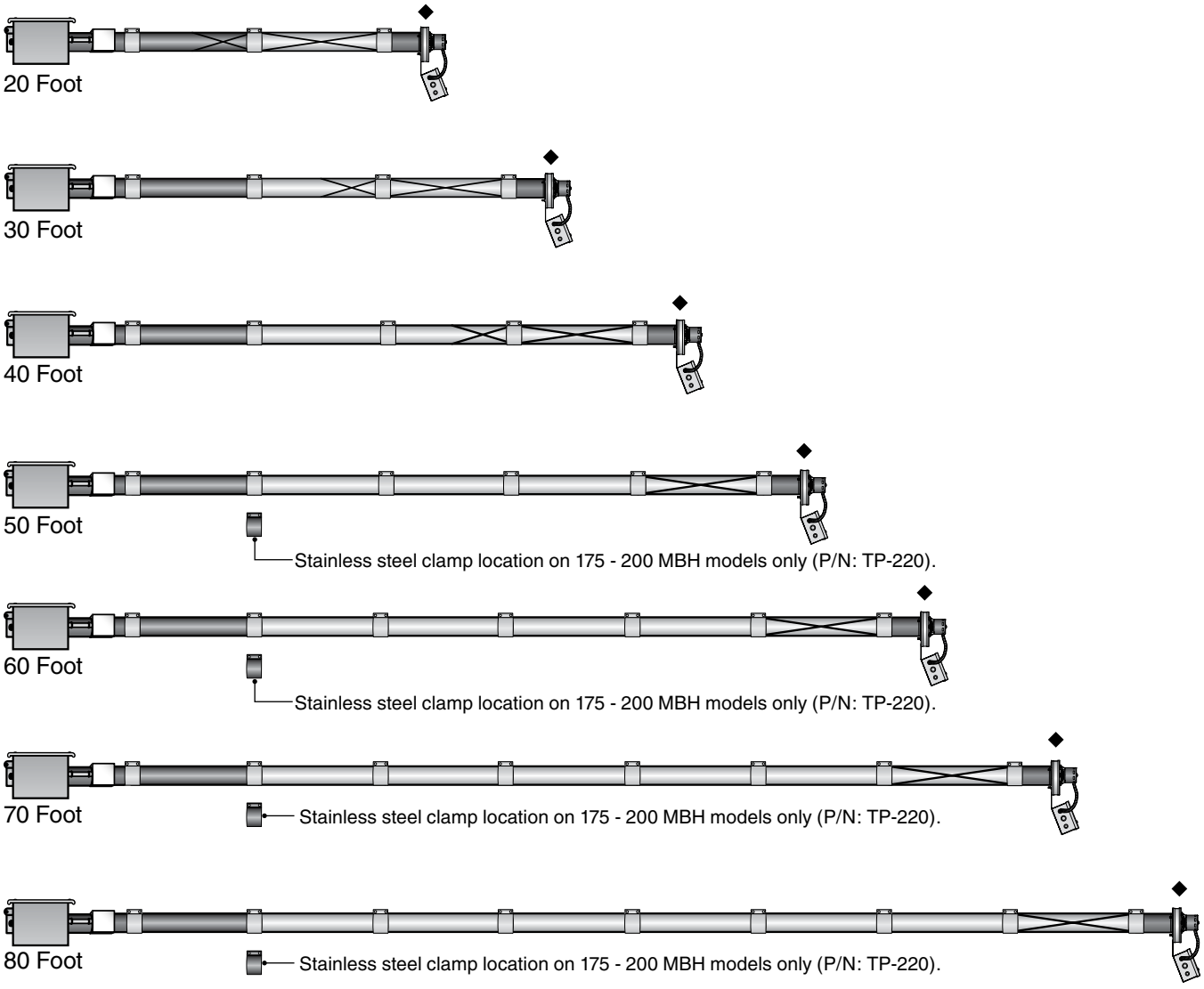
Titan = Black coated titanium stabilized aluminized steel.

Alum = Black coated aluminized treated steel.

Tube Installation Sequence

Figure 2.4 • Tube Installation Sequence

Important! The combustion chamber & radiant tube sections must be installed in the following order.


20 Foot
30 Foot
40 Foot
50 Foot
Stainless steel clamp location on 175 - 200 MBH models only (P/N: TP-220).
60 Foot
Stainless steel clamp location on 175 - 200 MBH models only (P/N: TP-220).
70 Foot
Stainless steel clamp location on 175 - 200 MBH models only (P/N: TP-220).
80 Foot
Stainless steel clamp location on 175 - 200 MBH models only (P/N: TP-220).

Key

- Burner Control Box with 16” Burner Tube
- Combustion Chamber
- Coated Aluminized Radiant Emitter Tube
- Baffle Location
- Standard Tube Clamp
- Stainless Steel Tube Clamp (P/N: TP-220)
  175-200 MBH models only - Located between 1st and 2nd 10 ft. tube sections.
- Exhauster Pump Assembly
- Security Chain Location (P/N: THCS)

Note: Refer to the Tube Heater General Manual, Chart 3.6 (page 23) for secured reflector joints.

Exhauster Mounting Details

When installing this heater in a U-shaped configuration, the exhauster assembly and the burner control box must not interfere with each other. When looking at the U-shaped configuration from behind, the burner control box is on the left and the exhauster assembly is on the right. See Figure 2.5.

Figure 2.5 • Exhauster Assembly Mounting Details - U-Shaped Configuration

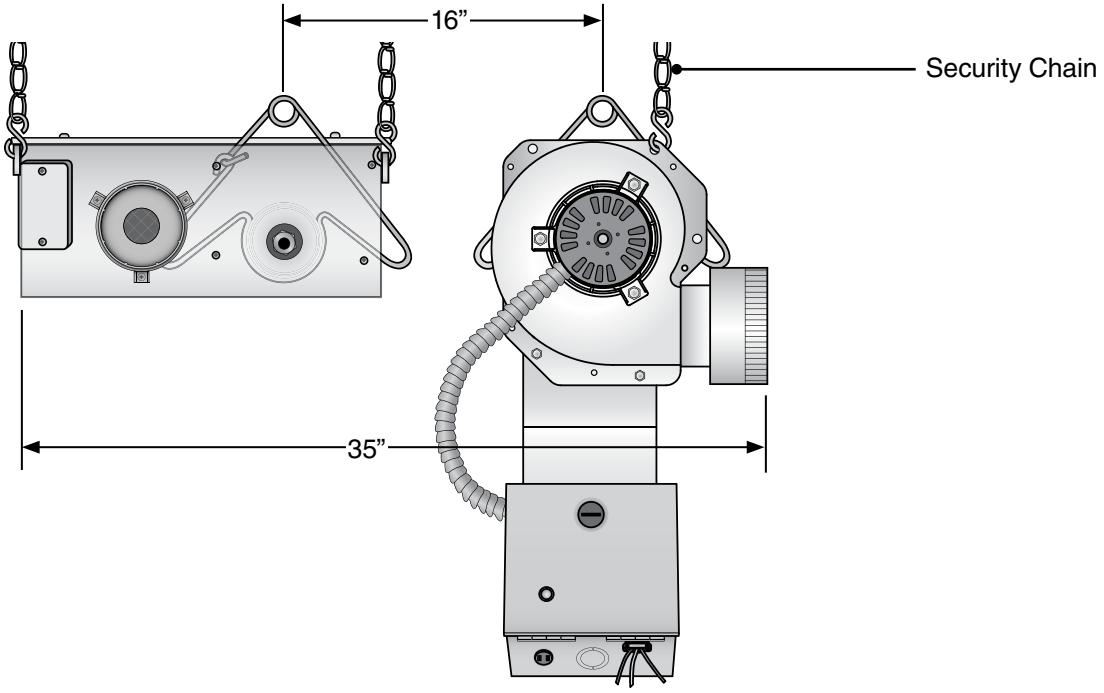
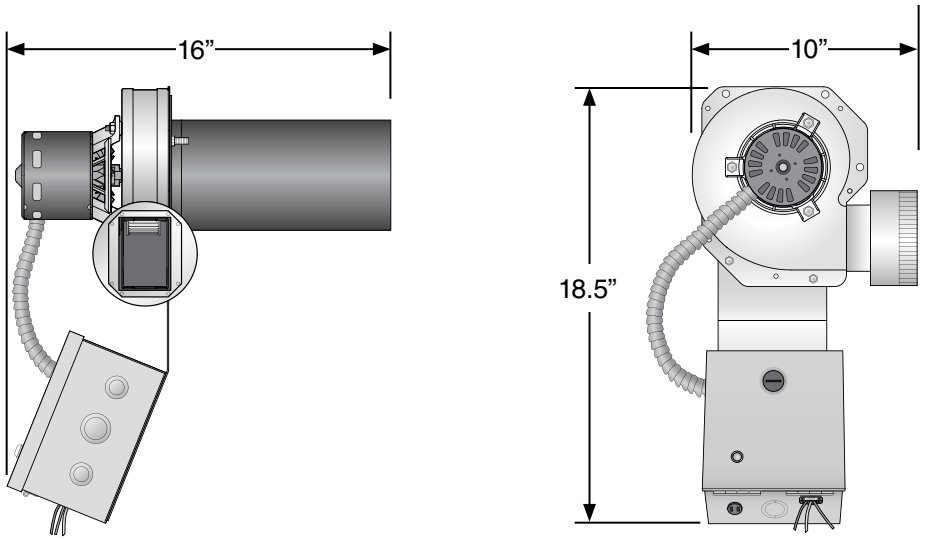


Figure 2.6 • Exhauster Assembly Dimensions



SIDE VIEW **END VIEW**

3.0 Operation

⚠ WARNING

This heater must be installed and serviced by trained gas installation and service personnel only.

Do not bypass any safety features or the heater's built in safety mechanisms will be compromised.

NOTE: Reference the Tube Heater General Manual (F/N: LIOGTa) for installation requirements.

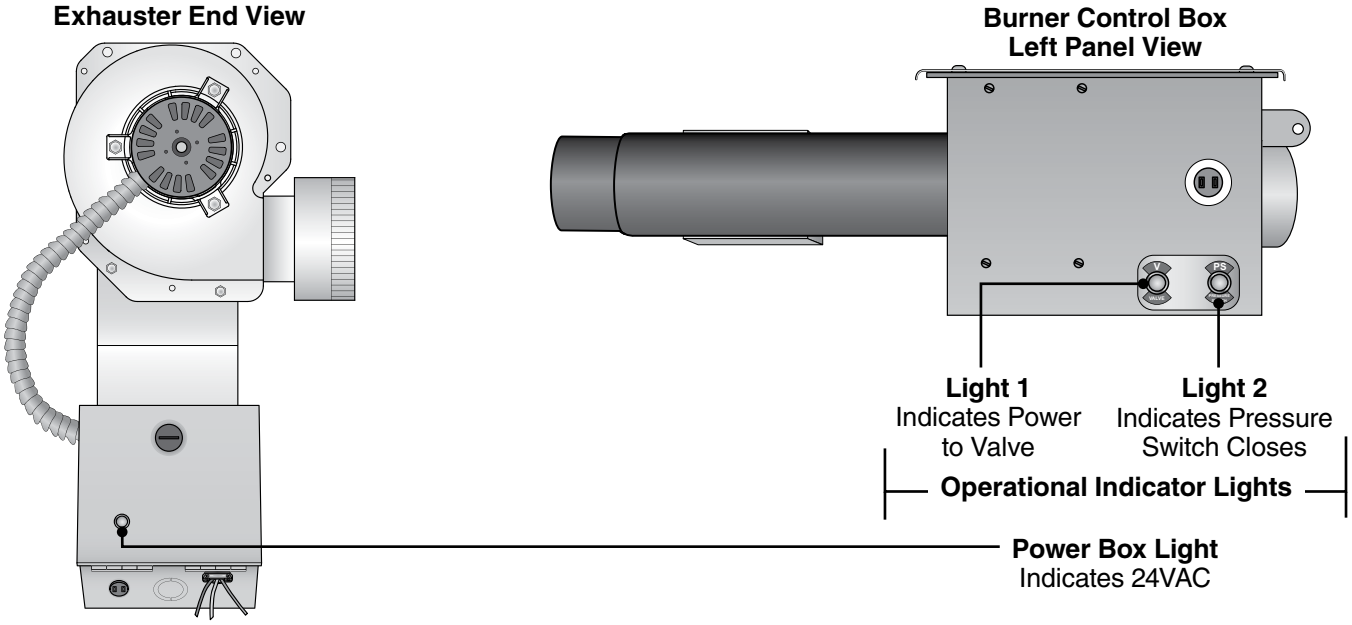
Sequence of Operation

Starting Circuit: Upon a call for heat, the exhauster fan energizes creating a negative air pressure allowing the differential pressure switch to close. A low voltage circuit is completed from the secondary side of the transformer to the ignition module. After a five (5) second delay, the igniter is powered. After seven (7) seconds, gas valve opens initiating the ignition trial. If flame is not sensed after 15 seconds, the heater will attempt to re-ignite for a total of three (3) trials for ignition before entering lockout mode.

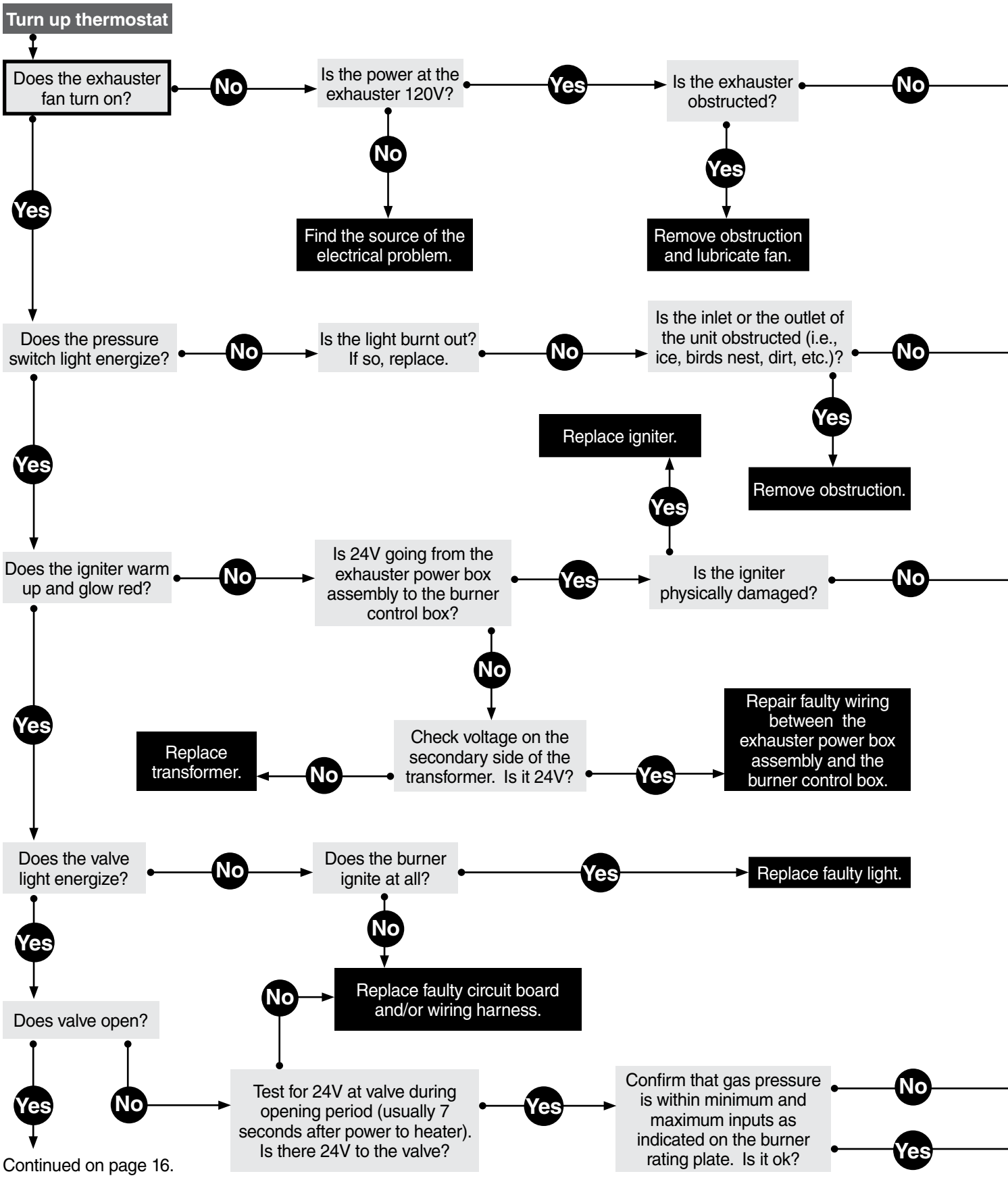
Running Circuit: After ignition, the flame rod monitors burner flame. If sense of flame is lost, the control closes the gas valve within one second and a new trial sequence (identical to the starting sequence) is initiated. If flame sense is not established within 15 seconds, the heater will attempt two (2) additional ignition sequences before entering lockout mode. The control can be reset by briefly interrupting the power source.

Operational Indicator Lights

Figure 3.1 • Operational Indicator Lights

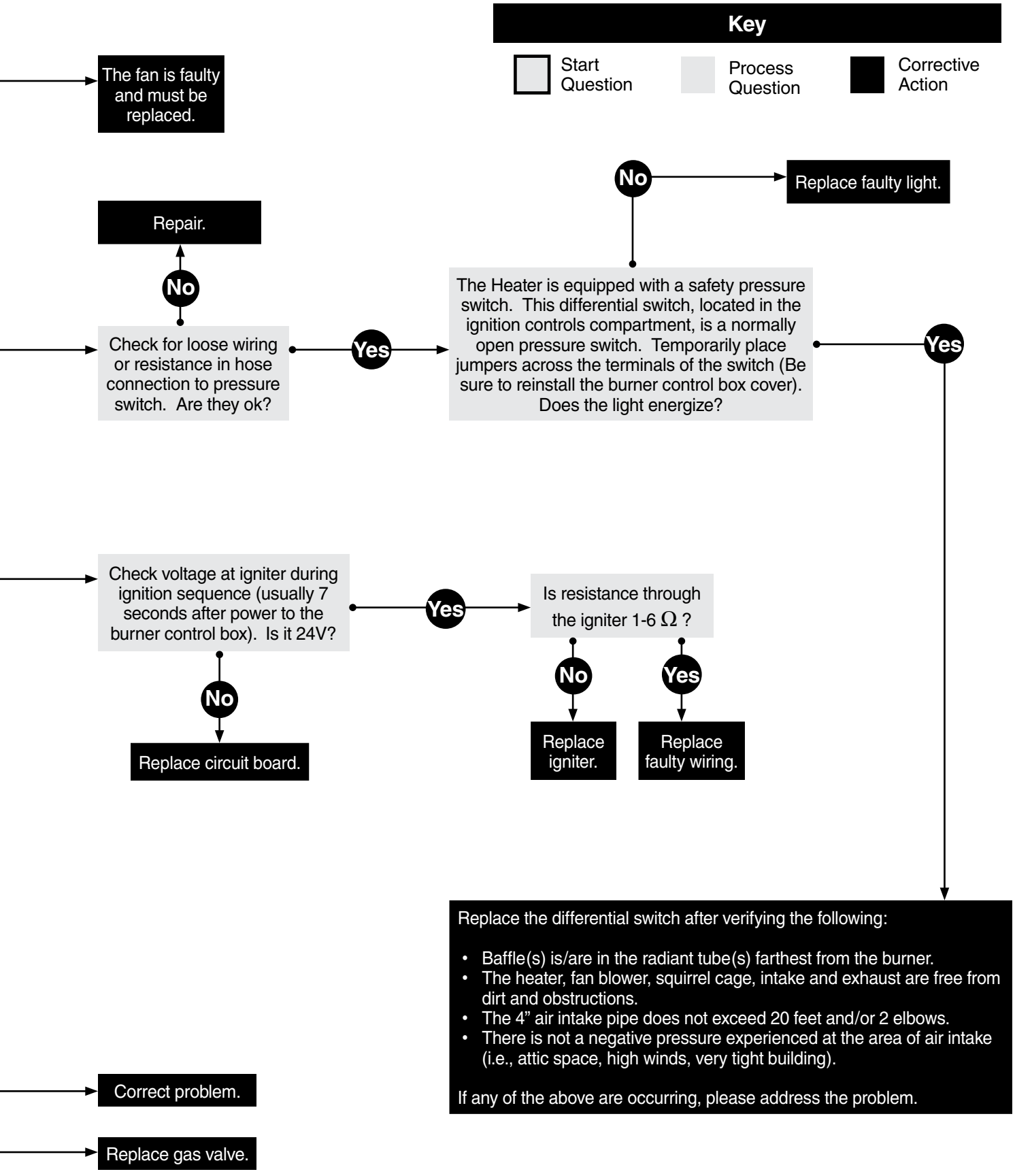


4.0 Troubleshooting Guide

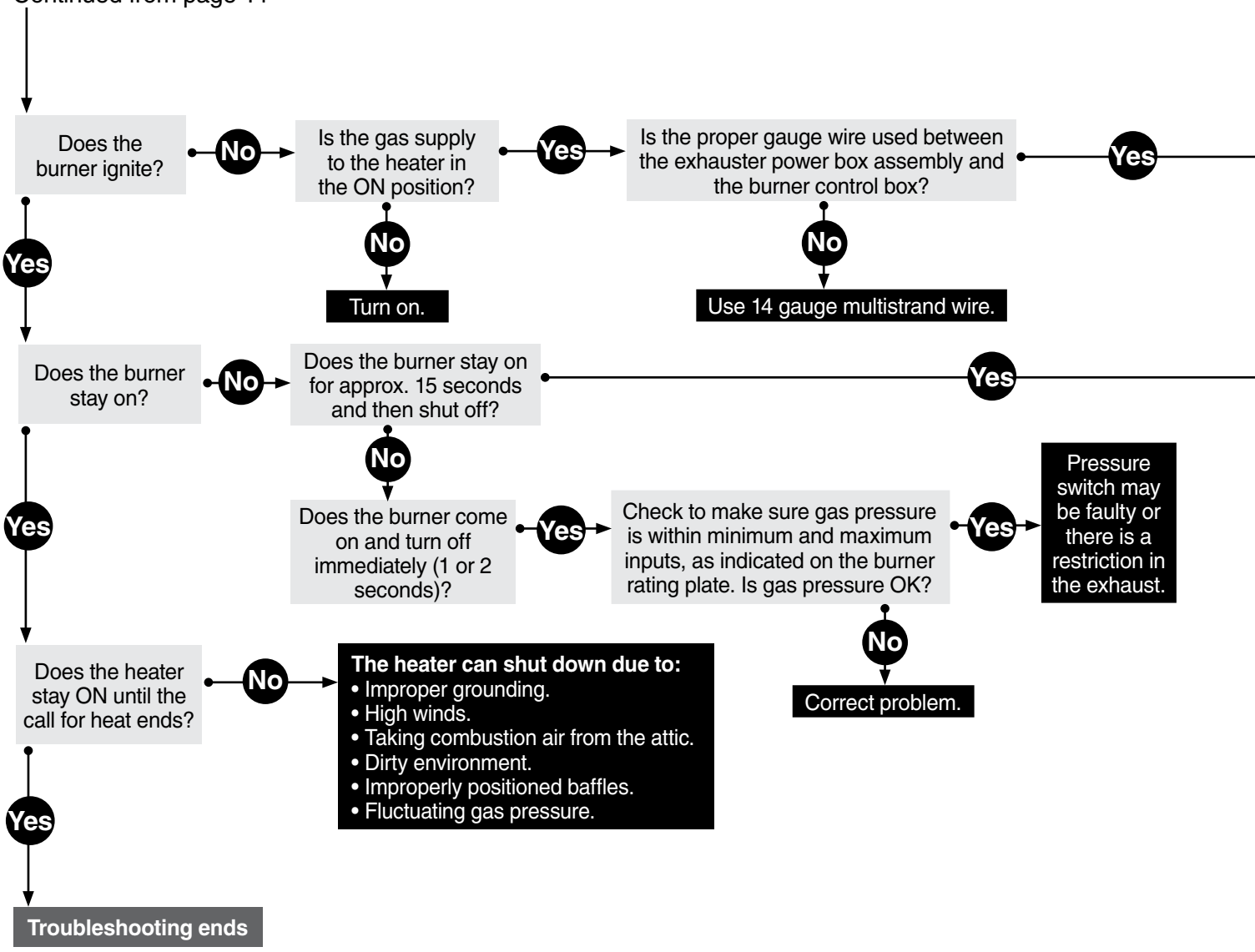

Turn up thermostat
Does the exhauster fan turn on?
No
Is the power at the exhauster 120V?
Yes
Is the exhauster obstructed?
No
No
Find the source of the electrical problem.
Yes
Remove obstruction and lubricate fan.
Yes
Does the pressure switch light energize?
No
Is the light burnt out? If so, replace.
No
Is the inlet or the outlet of the unit obstructed (i.e., ice, birds nest, dirt, etc.)?
No
Yes
Remove obstruction.
Replace igniter.
Yes
Yes
Does the igniter warm up and glow red?
No
Is 24V going from the exhauster power box assembly to the burner control box?
Yes
Is the igniter physically damaged?
No
No
Yes
Repair faulty wiring between the exhauster power box assembly and the burner control box.
Check voltage on the secondary side of the transformer. Is it 24V?
Yes
No
Replace transformer.
Does the valve light energize?
No
Does the burner ignite at all?
Yes
Replace faulty light.
Yes
No
No
Replace faulty circuit board and/or wiring harness.
Does valve open?
Yes
No
Test for 24V at valve during opening period (usually 7 seconds after power to heater). Is there 24V to the valve?
Yes
Confirm that gas pressure is within minimum and maximum inputs as indicated on the burner rating plate. Is it ok?
No
Yes

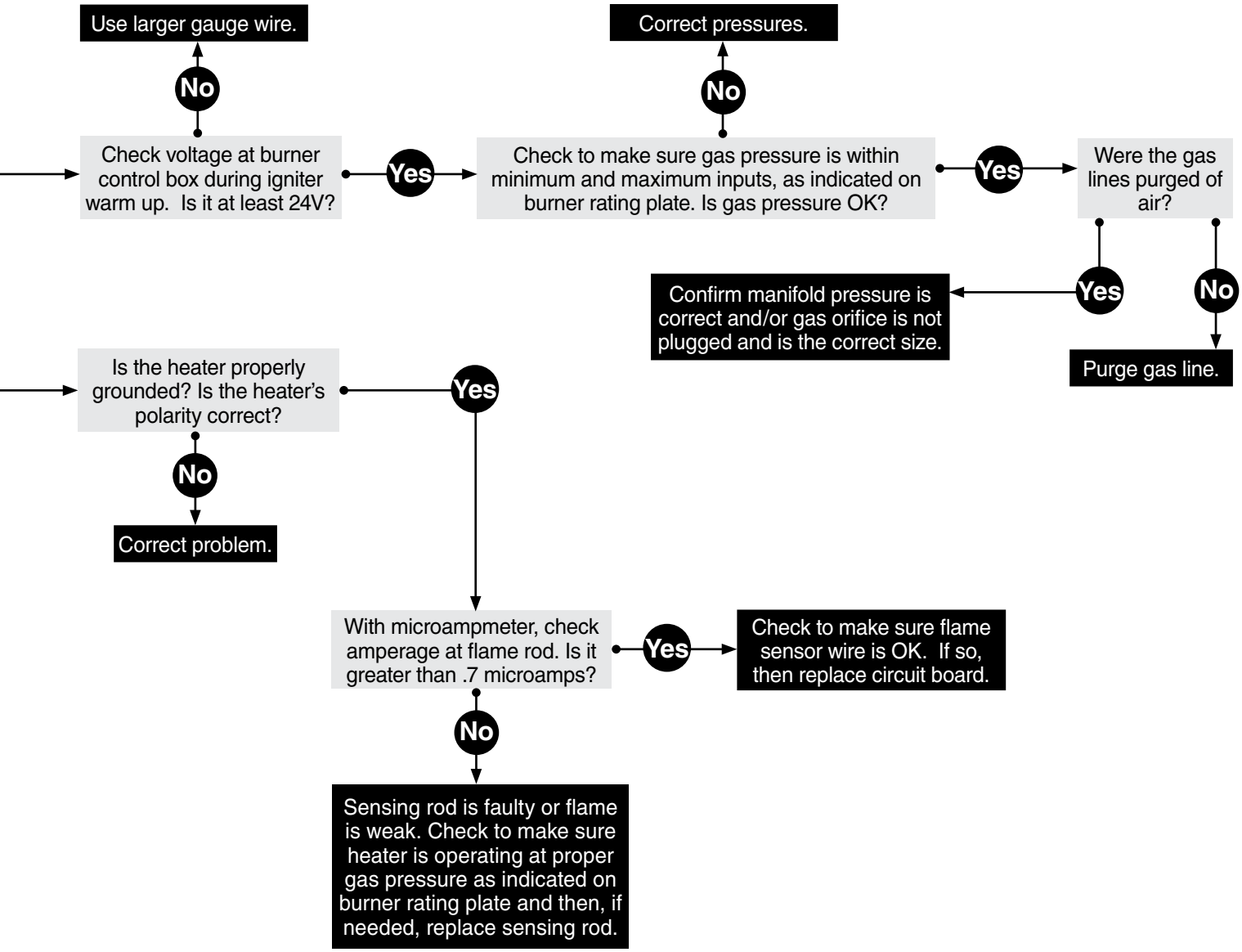
Continued on page 16.

NOTICE Bypassing any switch is intended for testing purposes only. Do not leave switch bypassed during normal operation or the heater's built-in safety mechanisms will be compromised.


Key
Start Question
Process Question
Corrective Action
The fan is faulty and must be replaced.
No
Replace faulty light.
Repair.
No
The Heater is equipped with a safety pressure switch. This differential switch, located in the ignition controls compartment, is a normally open pressure switch. Temporarily place jumpers across the terminals of the switch (Be sure to reinstall the burner control box cover). Does the light energize?
Yes
Check for loose wiring or resistance in hose connection to pressure switch. Are they ok?
Yes
Check voltage at igniter during ignition sequence (usually 7 seconds after power to the burner control box). Is it 24V?
Yes
Is resistance through the igniter 1-6 Ω ?
No
Yes
No
Replace igniter.
Replace faulty wiring.
Replace circuit board.
Replace the differential switch after verifying the following:
• Baffle(s) is/are in the radiant tube(s) farthest from the burner.
• The heater, fan blower, squirrel cage, intake and exhaust are free from dirt and obstructions.
• The 4" air intake pipe does not exceed 20 feet and/or 2 elbows.
• There is not a negative pressure experienced at the area of air intake (i.e., attic space, high winds, very tight building).
If any of the above are occurring, please address the problem.
Correct problem.
Replace gas valve.

Continued from page 14


Does the burner ignite?
No
Is the gas supply to the heater in the ON position?
Yes
Is the proper gauge wire used between the exhauster power box assembly and the burner control box?
Yes
No
Turn on.
No
Use 14 gauge multistrand wire.
Yes
Does the burner stay on?
No
Does the burner stay on for approx. 15 seconds and then shut off?
Yes
No
Does the burner come on and turn off immediately (1 or 2 seconds)?
Yes
Check to make sure gas pressure is within minimum and maximum inputs, as indicated on the burner rating plate. Is gas pressure OK?
Yes
Pressure switch may be faulty or there is a restriction in the exhaust.
No
Correct problem.
Yes
Does the heater stay ON until the call for heat ends?
No
The heater can shut down due to:
• Improper grounding.
• High winds.
• Taking combustion air from the attic.
• Dirty environment.
• Improperly positioned baffles.
• Fluctuating gas pressure.
Yes
Troubleshooting ends


Use larger gauge wire.
No
Check voltage at burner control box during igniter warm up. Is it at least 24V?
Yes
Correct pressures.
No
Check to make sure gas pressure is within minimum and maximum inputs, as indicated on burner rating plate. Is gas pressure OK?
Yes
Were the gas lines purged of air?
Yes
Confirm manifold pressure is correct and/or gas orifice is not plugged and is the correct size.
No
Purge gas line.
Is the heater properly grounded? Is the heater's polarity correct?
Yes
No
Correct problem.
With microampmeter, check amperage at flame rod. Is it greater than .7 microamps?
Yes
Check to make sure flame sensor wire is OK. If so, then replace circuit board.
No
Sensing rod is faulty or flame is weak. Check to make sure heater is operating at proper gas pressure as indicated on burner rating plate and then, if needed, replace sensing rod.

5.0 Parts

Figure 5.1 • Burner Assembly Components

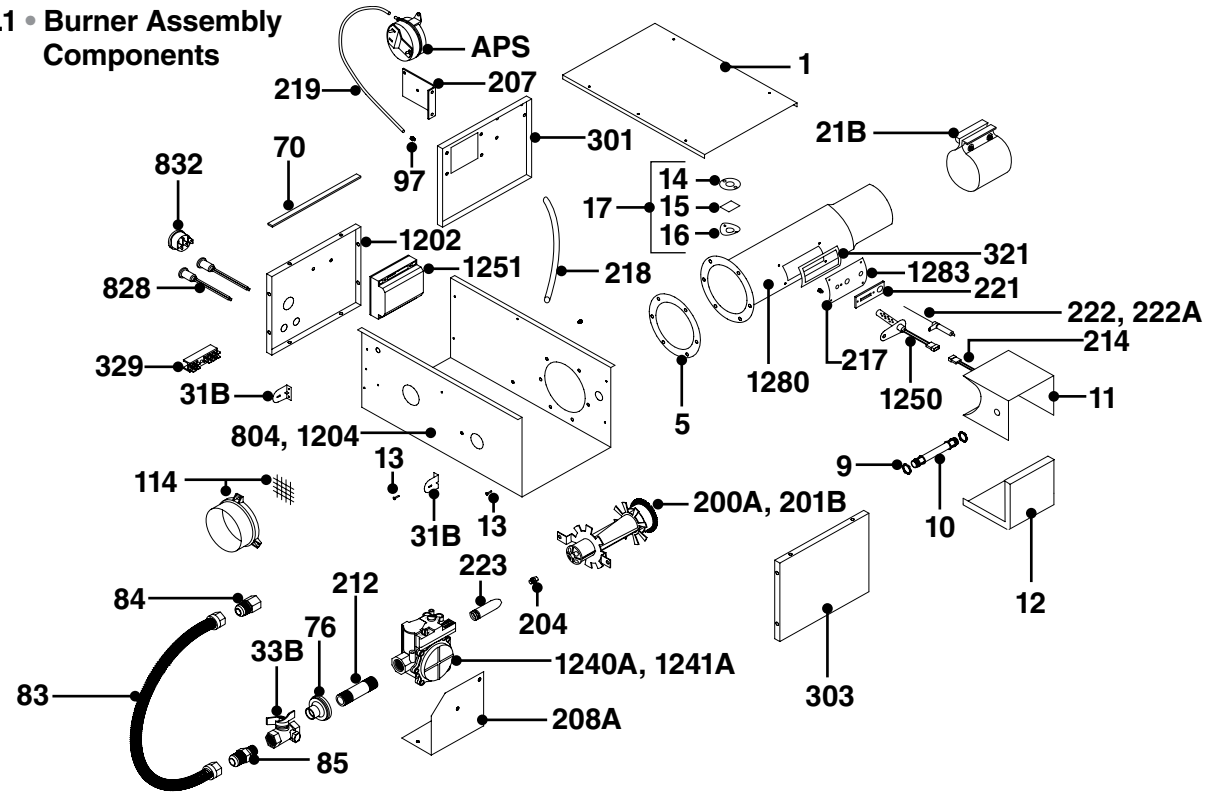
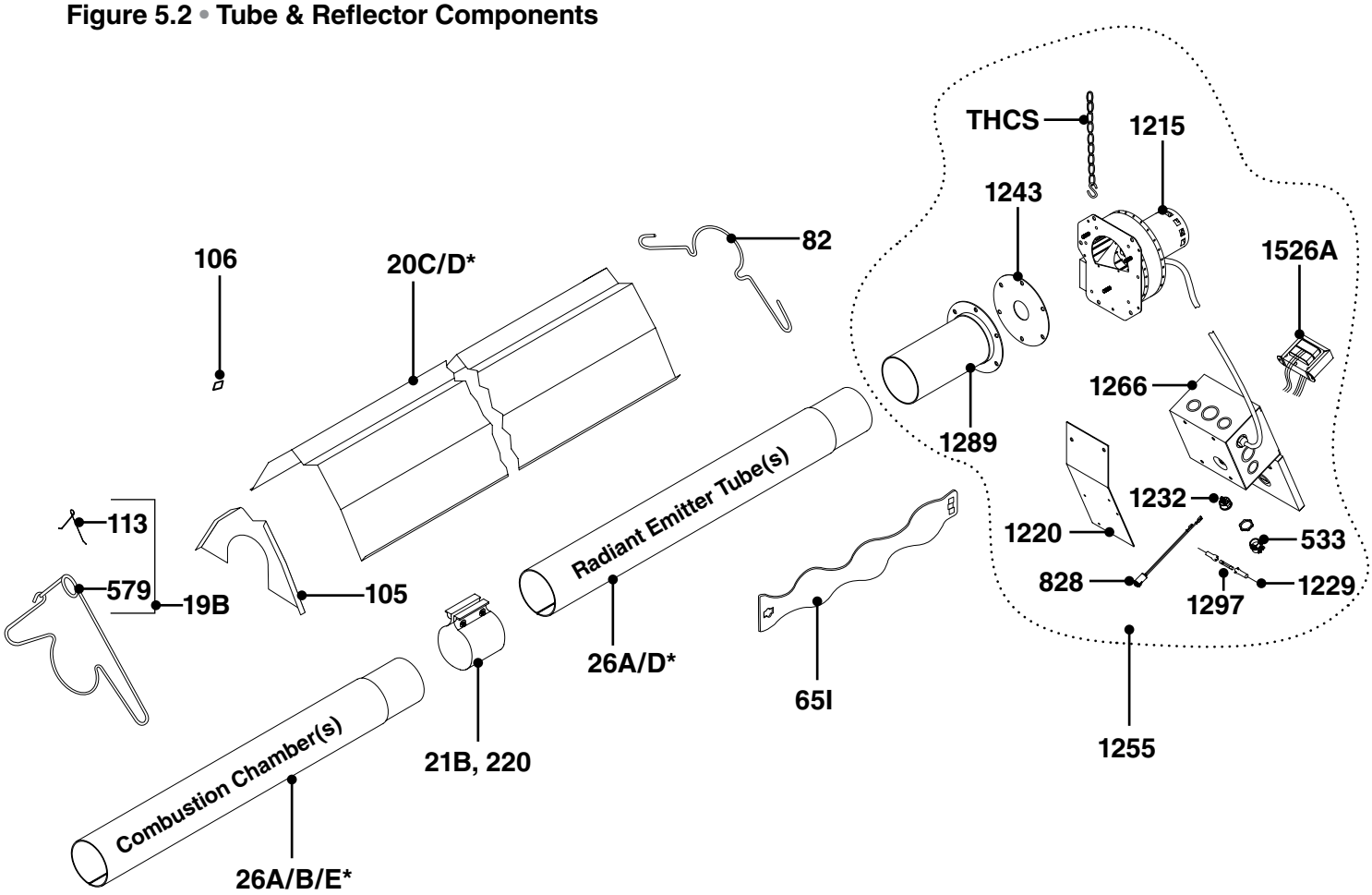


Chart 5.1 • Parts List

Part No.	Description	Part No.	Description
TP-1	Control Box Cover	TP-65I	36 in. Interlocking Turbulator Baffle
TP-5	Flange Gasket	TP-70	Control Box Cover Gasket (per foot**)
TP-9	Conduit Coupling	TP-76	Rubber Grommet
TP-10	Conduit 4 in. x 1/2 in.	TP-82	Reflector Center Support (RCS)
TP-11	Hot Surface Igniter Box	TP-83	24 in. Stainless Steel Flexible Gas Connector
TP-12	Hot Surface Igniter Box Cover	TP-84	1/2 in. Female / Male Flare Fitting
TP-13	8 x 1/2" Self-Drilling Screw (Qty. 2)	TP-85	1/2 in. Male / Male Flare Fitting
TP-14	Sight Glass Gasket	TP-97	1/4 in. x 1/4 in. Brass Barb Fitting (Qty. 2)
TP-15	Sight Glass	TP-105	Aluminum Reflector End Cap
TP-16	Sight Glass Washer	TP-106	Reflector End Cap Clips (Qty. 8)
TP-17	Sight Glass Kit	TP-113	Reflector Tension Spring
TP-19B	4 in. Wire Hanger with Tension Spring	TP-114	Plastic Air Orifice w/ Screen (Consult factory)
TP-20C	120 in. Aluminum Reflector	TP-200A	Low BTU Burner (Blue) - consult factory
TP-20D*	120 in. Stainless Steel Reflector	TP-201B	Mid BTU Burner (Tan) - consult factory
TP-21B	4 in. Standard Tube Clamp	TP-204	Gas Orifice (consult factory)
TP-26A	10 ft. Aluminized Radiant / Combustion Tube	TP-207	Pressure Switch Mounting Bracket
TP-26B	10 ft. Titanium Coated Combustion Tube	TP-208A	Gas Valve Mounting Bracket
TP-26D*	10 ft. 304 Stainless Steel Radiant Tube	TP-212	1/2 in. x 3 in. Pipe Nipple
TP-26E*	10 ft. 409 Stainless Steel Combustion Tube	TP-214	Glo-Bar Wiring Harness
TP-31B	Control Box Mounting Bracket (Qty. 2)	TP-217	Pressure Switch Barb Fitting
TP-33B	1/2 in. Shut-Off Ball Valve / Inlet Tap	TP-218	Differential Switch Vinyl Sensing Tube (exhaust)

* Optional upgrade or add-on item. **6 feet total required to cover outer edges of the burner control box.

Figure 5.2 • Tube & Reflector Components



Part No.	Description	Part No.	Description
TP-219	Differential Vinyl Sensing Tube (burner)	TP-1250	24V Mini Igniter
TP-220	Stainless Steel Tube Clamp (175 & 200 MBH)	TP-1251	Self Diagnostic Ignition Module
TP-221	Mini Igniter Gasket	TP-1255	Full Exhauster Assembly (TP-1215, TP-1266, TP-1243)
TP-222	Flame Rod	TP-1266	Power Box Assembly (individual parts below)
TP-222A	Flame Rod Wire	TP-533	120V Conduit Connector
TP-223	Gas Manifold	TP-828	Power Box 24V Yellow Indicator Light
TP-301	Center Panel	TP-1220	Power Box Mounting Bracket
TP-303	End Panel, Right	TP-1229	Fuse Holder
TP-321	Ignition Plate Gasket	TP-1232	Terminal Plug
TP-329	Terminal Block	TP-1289	Exhauster Mounting Tube
TP-579	4 in. Wire Hanger w/o Tension Spring	TP-1297	Fuse
TP-804	Burner Control Box Outer Shell (50-175 MBH)	TP-1526A	75VA Transformer with Foot Mounts
TP-828	Yellow Operational Ind. Light (Qty. 2)	TP-1280	16” Burner Tube with Flange
TP-832	Thermostat Terminal Strip	TP-1283	Mini Igniter Plate
TP-1202	End Panel, Left	TP-APS	Atmospheric Pressure Switch (see below)
TP-1204	Burner Control Box Outer Shell (200 MBH)	TP-264B	Differential Pressure Switch, 50 to 75 MBH
TP-1215	Exhauster Pump	TP-264E	Differential Pressure Switch, 100 to 125 MBH
TP-1240A	24V Gas Valve - Natural Gas Assembly	TP-1264A	Differential Pressure Switch, 150 to 175 MBH
TP-1241A	24V Gas Valve - LP Gas Assembly	TP-264F	Differential Pressure Switch, 200 MBH
TP-1243	Blower Restrictor Plate - Specify Model	THCS	Exhauster Assembly Security Chain

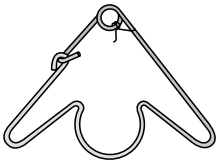
* Optional upgrade or add-on item.

Kit Contents Check List

Chart 5.2 • **Kit Contents for SV Series -** Reference the length column for your model.

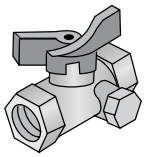
SV Series Kit Contents

TP-19B 4" Hanger with Reflector Tension Spring



TP-82 4" Reflector Center Support (RCS)

TP-33B 1/2" Shut-Off Ball Valve / Inlet Tap

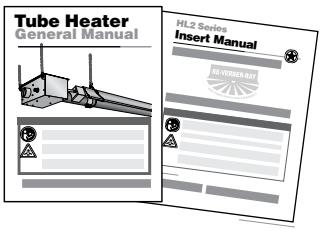


TP-106 Reflector End Cap Clips

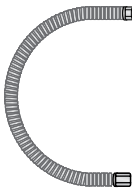
TP-25 1/4" Female Spade Terminal

THCS 60 in. Security Chain

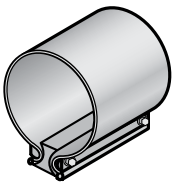
F/N: LIOGTa & LIOSVa Tube Heater General Manual and SV Series Insert Manual



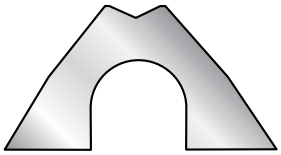
TP-83 24" Stainless Steel Flexible Gas Connector



TP-21B 4" Tube Clamp



TP-105 Reflector End Cap



Part No.	Description	20 ft.	30 ft.	40 ft.	50 ft.	60 ft.	70 ft.	80 ft.
TP-19B	4" Hanger w/ Tension Spring	3	4	5	6	7	8	9
TP-21B	4" Tube Clamp	3	4	5	6*	7*	8*	9*
TP-25	1/4" Female Spade Terminal	4	4	4	4	4	4	4
TP-33B	1/2" Shut-Off Valve & Inlet Tap	1	1	1	1	1	1	1
TP-82	4" Reflector Center Support	2	3	4	5	6	7	8
TP-83	24" S.S. Flexible Gas Connector	1	1	1	1	1	1	1
TP-105	Reflector End Cap	2	2	2	2	2	2	2
TP-106	Reflector End Cap Clips	8	8	8	8	8	8	8
THCS	60 in. Security Chain	1	1	1	1	1	1	1
LIOGTa	General Tube Heater Manual	1	1	1	1	1	1	1
LIOSVa	SV Series Insert Manual	1	1	1	1	1	1	1
Filled By:								

* One 4" stainless steel tube clamp (P/N: TP-220) is provided for each 175,000 - 200,000 BTU model. Place as shown on page 11.

Approvals

- CSA
- Indoor approval.
- Commercial approval.

Limited Warranty

- 1 year - Burner box components.
- 3 years - Combustion and radiant tubes.
- 5 years - Stainless steel burner.
- See page 36 of the General Tube Heater Manual for terms and conditions.

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